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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|------------------------------|------------------|
| 10/063,979 | 05/31/2002 | Pijush K. Dewanjee | PU2093 | 3811 |
| 23454 | 7590 | 09/22/2004 | | |
| CALLAWAY GOLF COMPANY 2180 RUTHERFORD ROAD CARLSBAD, CA 92008-7328 | | | EXAMINER BUTTNER, DAVID J | |
| | | | ART UNIT 1712 | PAPER NUMBER |

DATE MAILED: 09/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | |
|------------------------------|-----------------|-----------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 10/063,979 | DEWANJEE ET AL. |
| Examiner | Art Unit | |
| David Buttner | 1712 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on ____.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1,2,4 and 8-21 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) Claim(s) ____ is/are allowed.
- 6) Claim(s) 1,2,4 and 8-21 is/are rejected.
- 7) Claim(s) ____ is/are objected to.
- 8) Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on ____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. ____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

| | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

Claim 20 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The compound of claim 20 is not named in the specification. The "N,N'" substitution is not supported and probably erroneous.

Claims 1,2,4 and 8-21 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A "polypropylene glycol terminated diisocyanate" would have alcohol terminal groups rather than isocyanate terminal groups. Is "polypropylene glycol terminated by toluene diisocyanate" intended? Is "toluene diisocyanate terminated polypropylene glycol" intended?

Claims 1,2,4 and 8-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Wu '261 Patent.

Wu produces urethane covered golf balls (abstract). The urethane can be a urethane prepolymer cured with polyamines such as methylene bis (diethyl aniline), dialkyldiamino diphenyl methane, dimethylthiotoluenediamine and mixtures thereof (column 7, lines 32-45). Applicant's preferred dialkyl diamino diphenyl methane – Unilink 4200 (paragraph 31 of spec.) is bis (sec-butyl amino) diphenyl methane (see

chemical Abstract registry No. 5285-60-9). This compound is also suggested by Wu (column 7, line 35). It has the same MW as methylene bis (diethyl aniline).

The prepolymer is preferably based on polytetramethylene ether glycol (col 20 line 64) and a diisocyanate such as TDI (col 20 line 23) which is toluenediisocyanate. Wu suggests a 4-6.5% isocyanate content in the prepolymer (column 6, line 41).

The ball can have an ionomer inner cover (column 6, lines 63-64) and a Shore D of 50-75 (col 26 line 20).

Wu does not specifically give a mixing ratio for his mixture of curatives, but any ratio is *prima facie* obvious.

Claims 1-5 and 8-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Cavallaro 2003/0171166 Publication.

Cavallaro teaches urethane covered golf balls (abstract). The urethane can be a urethane prepolymer cured with polyamines such as methylene bis (diethyl aniline), dialkyldiamino biphenyl methane, dimethylthiotoluenediamine and mixtures thereof (paragraph 62). Applicant's preferred dialkyl diamino biphenyl methane – Unilink 4200 (paragraph 31 of spec.) is bis (sec-butyl amino) biphenyl methane, which is also named by Cavallaro.

The prepolymer is preferably based on PTMEG (paragraph 58) and a diisocyanate such as TDI (paragraph 56). Cavallaro an isocyanate content of less than 7% on the prepolymer (paragraph 57).

Cavallaro suggest ionomer inner cover (paragraph 42) of 50-65 Shore D (paragraph 79).

Cavallaro does not specifically give a mixing ratio for his mixture of curing agents, but any ratio is *prima facie* obvious.

Claims 1,2,4 and 8-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Wu '261 or Cavallaro 2003/0171166 optionally in view of Isaac '568 or Peter '313.

Wu and Cavallaro suggest the use of more than one curing agent, but do not give any reasons for doing so.

Peter (col. 10 line 25-32) teaches such combinations allow for a variation in hardness of the final polyurethane. Isaac (col 2 line 23-30; col 1 line 51-60) teaches such a combination allows for a partial cure to form half shells (due to the faster curative) and a final cure to bond the half shells together (due to the slower curative).

It would have been obvious to pair a "softer" curing agent with the methylene bis (diethyl) aniline to form a "softer" polyurethane on the Wu or Cavallaro ball.

Alternatively it would have been obvious to pair a "slower" curing agent with the methylene bis (diethyl) aniline to allow for multiple molding steps.

Claims 1,2,4 and 8-21 rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 6762273. Although the conflicting claims are not identical, they are not patentably distinct from each other because the patent also claims urethane covers of applicant's preferred polyurethane. The current claims are broader in the sense that the boundary layer is less restricted.

Claims 1,2 and 4 rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-6 of U.S. Patent No. 6787626. Although the conflicting claims are not identical, they are not patentably distinct from each other because the patent also claims covers of urethane prepolymer cured with MDEA and a second curative. .

Applicant's arguments filed 7/26/04 have been fully considered but they are not persuasive.

Applicant argues Wu/Cavallaro are directed to slow curing polyamines with MDI-PTMEG rather than the MDEA cured TDI-PTMEG now claimed.

This is not convincing. Wu and Cavallaro clearly suggest MDEA, TDI and PTMEG. What material claim limitation do the references fail to meet?

Applicant argues the claims are directed to -NCO contents much lower than the references.

This is not understood. Wu clearly calls for 4-6.5% -NCO content.

Applicant argues a second curative lowers the melting point of methylene bis (diethyl) aniline which lengthens the reaction time.

This is not convincing. Many of applicant's claims allow for any second curing agent. Some curing agents have melting points above that of methylene bis (diethyl) aniline. According to applicant's logic, this would shorten (rather than lengthen) the gel time. Methylene bis (2 chloroaniline) is one such example of a curing agent with a higher melting point (see Ashford's Dictionary).

Secondly, the examiner is not convinced an addition of all lower melting point curing agents to the methylene bis (diethyl) aniline would lower the melting point of bis (diethyl) aniline. It would be expected that each curing agent would still exhibit its own melting point and reaction rate. This is consistent with the teachings of the Isaac reference. Perhaps if the two curatives were miscible or soluble in one another there may be some change in the melting point. Miscible/soluble pairs of solids are rare.

Finally, Isaac teaches the combination of fast and slow curatives lengthen the gel time relative to the fast curative alone. This is applicant's goal (paragraph 24 of spec). Applicant's lengthened gel time is the expected result of combining slow and fast curative.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Buttner whose telephone number is 571-272-1084. The examiner can normally be reached on weekdays from 10 to 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski, can be reached on 571-272-1302. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DAVID J. BUTTNER
PRIMARY EXAMINER

D. Buttner
September 17, 2004

David Buttner